STEREO PLUS 2
SN / SW-CHASSIS
(50 Hz, 4:3 / 16:9)

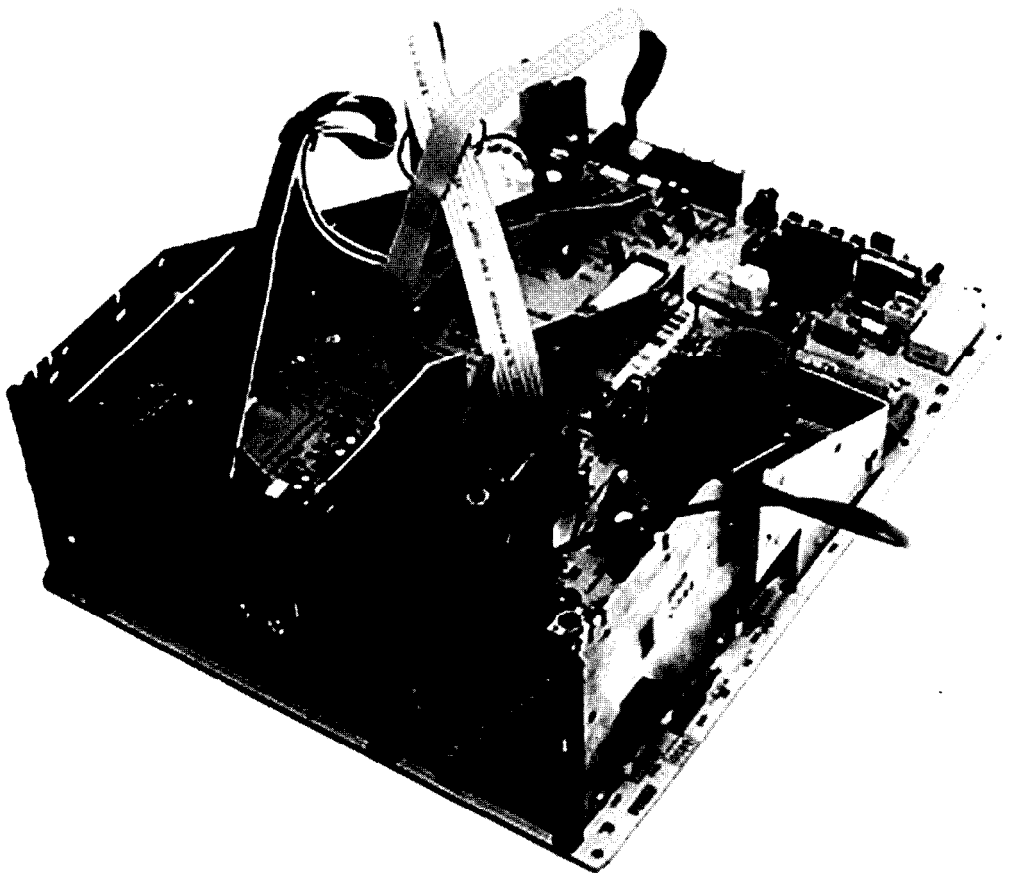
TV

3 /1999

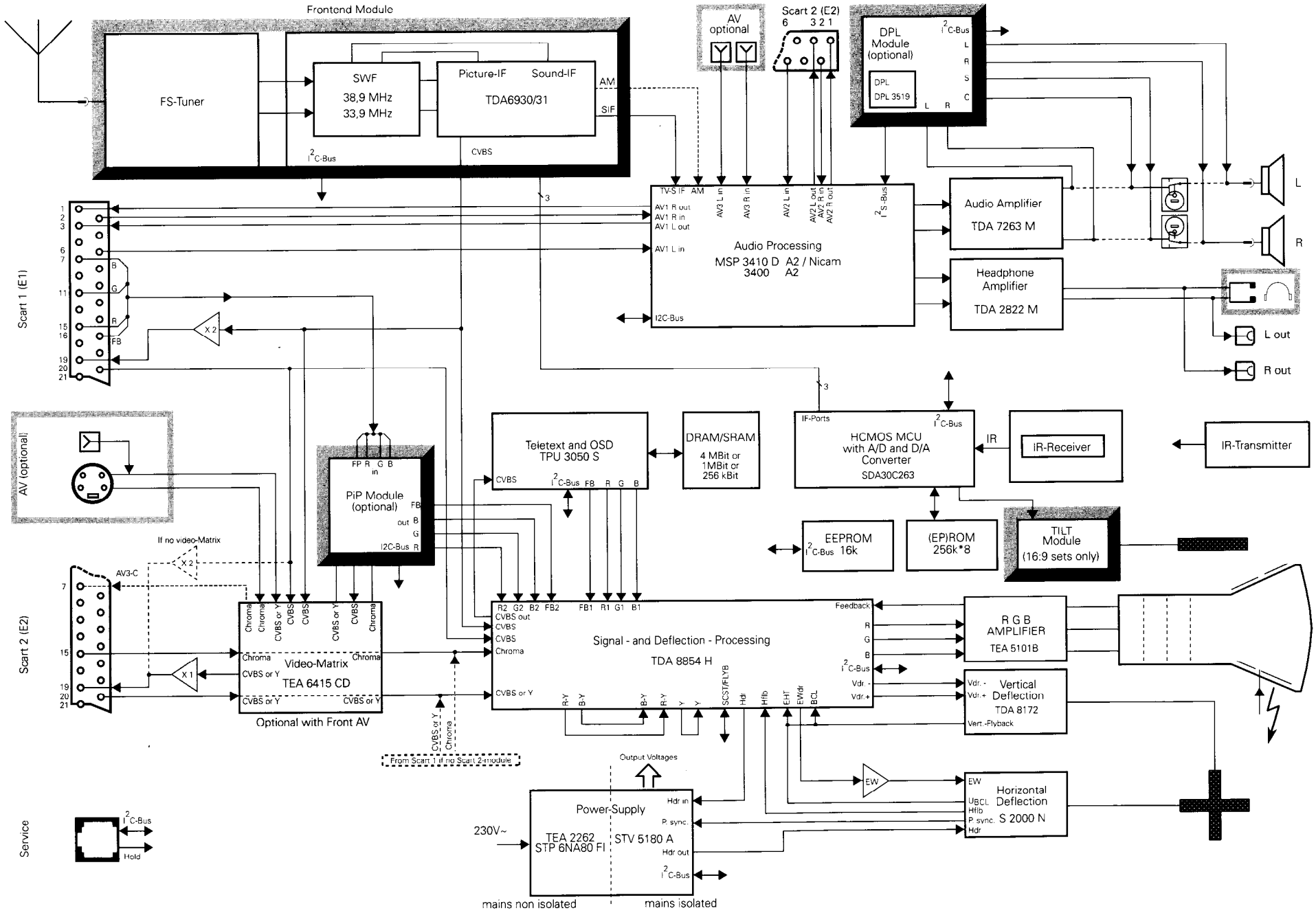
(GB) Service manual
(D) Service-Manual
(S) Serviceanvisning
(F) Manuel de service
(I) Manuale di servizio

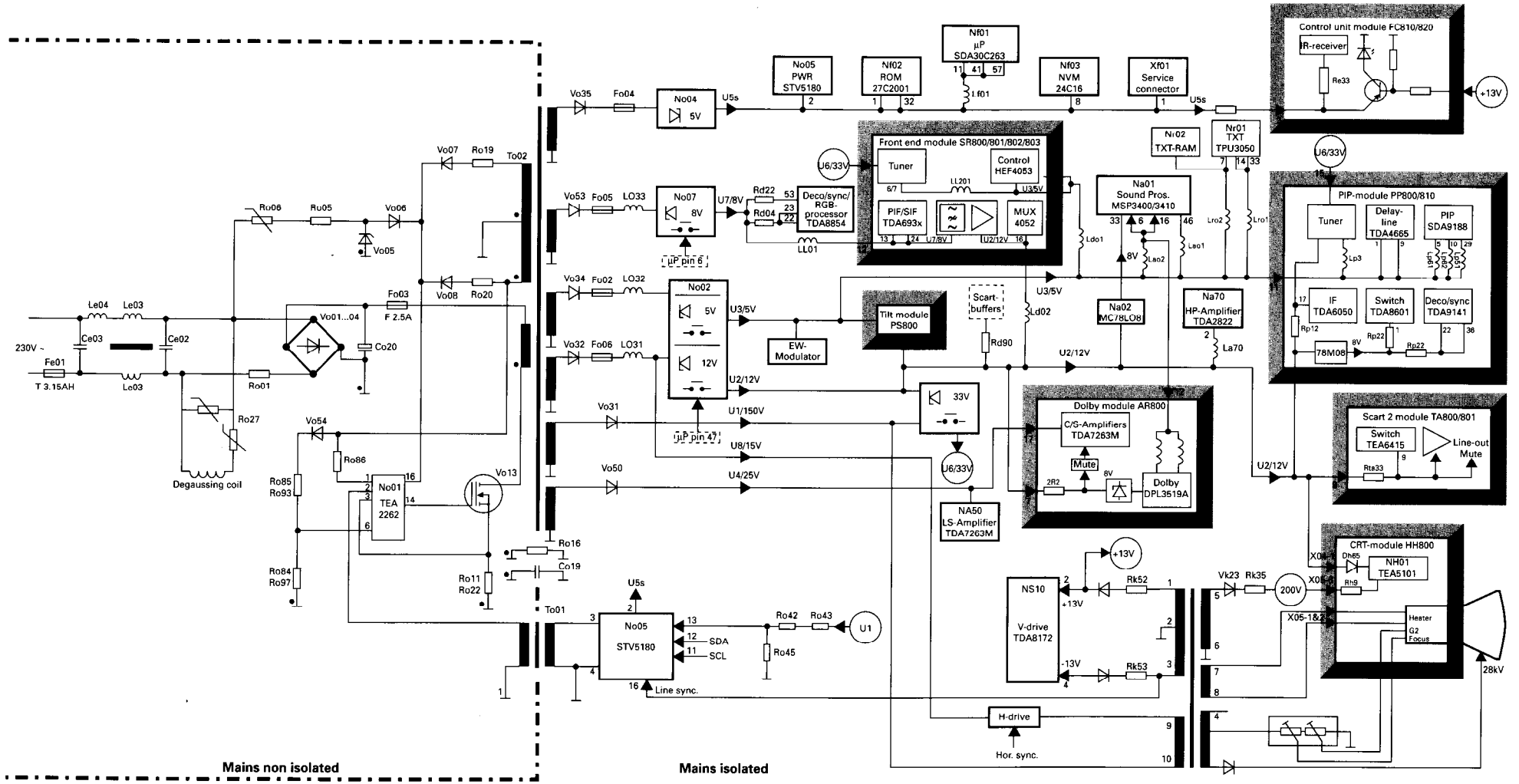
AKAI

TV 2550-TN
TV 2550-T Multi
TV 2551-TN
TV 2551-TN UK
TV 2551-TN Multi
TV 2850-TN
TV 2850-T Multi
TV 2851-T Multi
TV 2851-T Multi White
TV 2852-T
TV 2852-T Multi
TV 2852-TN UK
TV 2881-T Multi
TV 2881-T Multi UK
TV 3451-T Multi



Block diagram, signal routes

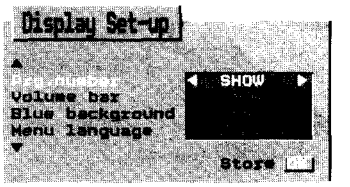



Mains non isolated
Mains isolated
230V ~
Fe01
T 3.15AH
Le04
Le03
Ce03
Ce02
Le03
Vo01...04
Co20
Fo03
F 2.5A
Ro01
Ro06
Ro05
Vo06
Vo05
Vo07
Ro19
To02
Vo08
Ro20
Ro27
Degaussing coil
Vo54
Ro86
Ro85
Ro93
Ro84
Ro97
No01
TEA
2262
Vo13
Ro16
Co19
Ro11
Ro22
To01
U5s
No05
STV5180
SDA
SCL
Line sync.
Ro42
Ro43
U1
Ro45
No04
5V
Vo35
Fo04
U5s
No05
PWR
STV5180
Nf02
ROM
27C2001
Nf01
µP
SDA30C263
I.f01
Nf03
NVM
24C16
Xf01
Service
connector
Control unit module FC810/820
IR-receiver
Re33
+13V
Front end module SR800/801/802/803
Tuner
Control
HEF4053
LL201
U3/5V
PIF/SIF
TDA693x
U7/8V
U2/12V
MUX
4052
U6/33V
Vo53
Fo05
LO33
No07
8V
U7/8V
Rd22
Rd04
Deco/sync/
RGB-
processor
TDA8854
LL01
µP pin 6
Nr02
TXT-RAM
Nr01
TXT
TPU3050
Na01
Sound Pros.
MSP3400/3410
Ldo1
Lao1
Lao2
Lro2
Lro1
8V
PIP-module PP800/810
Tuner
Delay-
line
TDA4665
PIP
SDA9188
Lp3
Lp61
Lp62
Lp63
IF
TDA6050
Switch
TDA8601
Deco/sync
TDA9141
Rp12
Rp22
78M08
Vo34
Fo02
LO32
No02
5V
12V
U3/5V
U2/12V
µP pin 47
Vo32
Fo06
LO31
Vo31
U1/150V
U8/15V
Vo50
U4/25V
EW-
Modulator
Tilt module
PS800
Scart-
buffers
Rd90
Ld02
Na02
MC78L08
Na70
HP-Amplifier
TDA2822
La70
33V
U6/33V
NA50
LS-Amplifier
TDA7263M
Dolby module AR800
C/S-Amplifiers
TDA7263M
Mute
8V
2R2
Dolby
DPL3519A
Scart 2 module TA800/801
Switch
TEA6415
Line-out
Mute
Rta33
NS10
V-drive
TDA8172
+13V
-13V
Rk52
Rk53
Vk23
Rk35
200V
CRT-module HH800
Dh65
NH01
TEA5101
Rh9
Heater
G2
Focus
28kV
H-drive
Hor. sync.

Operating instructions

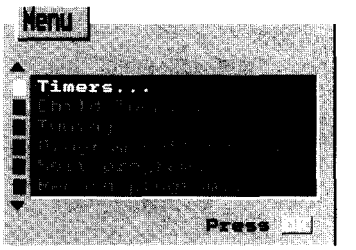
Changing the menu language

1. Press the yellow button to select the Vision menu.
2. Press the red button to select the Display set-up menu.
3. Change the menu language with cursor buttons.
4. Press the OK button to store the changes.
5. Press the TV button to exit.



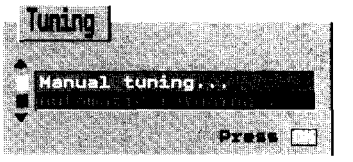
Manual tuning

1. Select the programme number you want to tune.
2. Press the MENU button.
3. Select "Tuning" with the cursor buttons and press the OK button.
4. Select "Manual tuning" and press the OK button.
5. Select "Channel"-line with the cursor buttons and select the channel you want to watch with 3 digits.
6. Press the OK button to store.
7. Press the TV button to exit.



APSi (Automatic Programming System)

1. Press the MENU button.
2. Select "Tuning" with the cursor buttons and press the OK button.
3. Select "Automatic retuning" and press the OK button.
4. To retune the channels, press the red button.



Service adjustments

Service mode activation

Service mode can be enabled whenever the receiver is switched ON or is in stand-by mode.

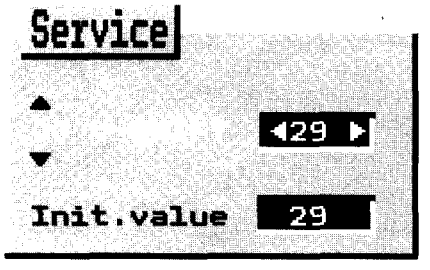
1a)If the receiver is switched ON, press the ◢- (volume minus) button on local control unit and at the same time start entering password: MENU and TV. Release the ◢- button after the MENU button has been pressed.

1b)If the receiver is in stand-by mode, press the ◢- button on local control unit and at the same time start entering password: MENU and TV. Release the ◢- button after the MENU button has been pressed. Switch ON the receiver by pressing the TV button.

2. Activate the service mode by pressing the i button and exit the service mode by pressing the TV button.

3. Disable the service mode by switching off the receiver with the mains switch.

Note! Service mode activation stays enabled until the receiver is switched off with the mains button.



In service mode an adjustment menu is shown on the screen.The adjustment number and name, initializing (bottom) and adjustment (top) values are shown in the menu.

Initialization of NVRAM

Initialization of NVRAM

If the NVRAM is replaced, it must be initialized and configured.

Note! The receiver doesn't start with uninitialized NVRAM, but stays in stand-by mode.

1. Activate the service mode as described in "Service mode activation".

2. Initialize the NVRAM by entering the key code: BLUE, 2, 5, 4 and OK. Wait approx. 15 seconds and then press the OK button again.

3. Exit the service mode by pressing the TV-button.

4. Start the receiver and tune in one or more TV channels with the "manual tuning" method.

Note! The channel search doesn't work before the reference adjustments (code 12 and 13) have been made, see page 10.

5. Enter the service mode again and configure the TV set as described in "Configuration and fault diagnosis". (Check that the automatic configuration results in IIC DEV 1&2, AUTO OPT and IF OPT bytes are corresponding to the actual configuration of the TV set.)

6. Set the manual option bytes (TEXT OPT, HW OPT and SW OPT) to correspond the actual configuration of the TV set.

7. Make all necessary service adjustments (see section "SERVICE ADJUSTMENTS VIA IIC BUS, page 9)

Note! U1 VALU adjustment must be done first.

8. Disable the service mode by switching off the receiver with the mains switch.

Service adjustments

Configuration and fault diagnosis

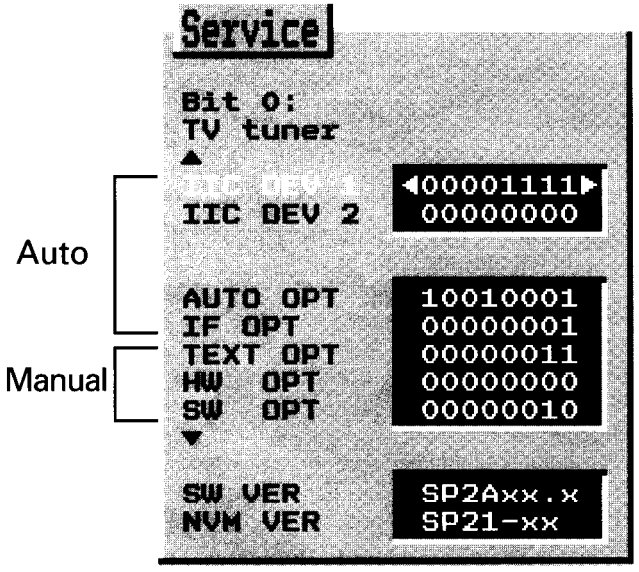
The set must be configured after adding or removing any option. By pressing the RED button in service mode, the processor checks the configuration of the TV set and shows the settings on the screen. The configuration can be stored by pressing the OK button.

This feature can also be used in fault diagnosis. If an option bit is not '1' when it should be, the IC (or feature) is either not present or faulty.

Note! IIC DEV 1, IIC DEV 2, AUTO OPT and IF OPT bytes are configured automatically every time the RED-button is pressed.
TEXT OPT, HW OPT and SW OPT bytes must be set manually.

Changing the option bytes

1. Select the configuration mode by pressing the RED button in the service mode.



SW VER = µP software version.
NVM VER = NVRAM software version.

2. Select IIC Device byte 1 - 2 or Option byte 1 - 5 with cursor buttons (up/down). The selected byte is shown highlighted.
   The name of a responding bit can be seen by using cursor buttons (left/right).

3. Set / clear the bits with number buttons (0 ... 7).

4. Store the settings by pressing the OK button.

5. Return to the normal service mode by pressing the RED button.

Option byte description

Bit	Description	Setting	'1'	'0'
		7 6 5 4 3 2 1 0		
	IIC DEV 1	**00001111**		
0	TV tuner 5002PH5		Yes	No
1	Decoder/sync processor TDA8854		Yes	No
2	Teletext processor TPU3050		Yes	No
3	Sound processor MSP34x0		Yes	No
4	Video matrix switch TEA6415		Yes	No
5	PIP processor		Yes	No
6	PIP tuner		Yes	No
7	3D virtual sound processor		Yes	No
	IIC DEV 2	**00000000**		
5	Power controller STV5180		Yes	No
6	Sound processor MSP3410		Yes	No
7	Reserved for production use		Yes	No
	AUTO OPT	**10010001**		
0	Scart 2		Yes	No
1	16:9 picture tube		Yes	No
3	Text memory 4 Mb DRAM		Yes	No
4	Text memory 1 Mb SRAM		Yes	No
5	Text memory 256 kb SRAM		Yes	No
6	Tilt adjustment		Yes	No
7	NICAM identification enabled		Yes	No
	IF OPT	**00000001**		
0	B/G system in IF		Yes	No
1	I system in IF		Yes	No
2	D/K system in IF		Yes	No
3, 4	L/L' system in IF		Yes	No
5	HEF4094B in IF		Yes	No
	TEXT OPT	**00000011**		
1	FLOF function enabled		Yes	No
7,6,5	Text character set selected	000 = West Europe / Czech 001 = East Europe 010 = West Europe / USA 011 = West Europe / Turkish 100 = East Europe 2		
	HW OPT	**00000000**		
0	A/V connector installed		Yes	No
1	SVHS input in AV		Yes	No
2	3.58 MHz xtal installed		Yes	No
	SW OPT	**00000010**		
1	Carrier mute enabled		Yes	No
2	Stand-by prevent		Yes	No
3	Autostart enabled (Special use only!)		Yes	No
4	Pal + helper blanking 4:3		Yes	No
5	E1 FB enabled (USER)		Yes	No
7	Hotel TV enabled		Yes	No

SW VER SP2Axx. x

SW VER = µP software version

NVM VER SP21-xx

NVM VER = NVRAM software version

Service adjustments via IIC bus

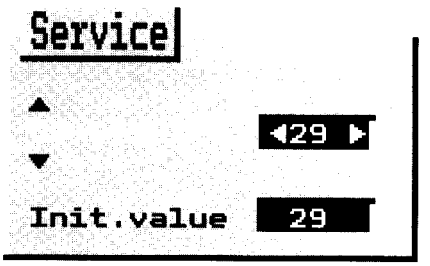
Remote control buttons in service mode
When the receiver is in the service mode you can select normal TV mode by pressing the TV button and return to the service mode by pressing the i button.
Number and cursor buttons are used for service adjustments. The OK button stores the settings.
The yellow button hides/shows the service menu to simplify the picture adjustments.

Making adjustments for different picture formats
Make all adjustments with PAL signal unless otherwise mentioned. Make 4:3 set adjustments with normal 4:3(CLASSIC) picture format and 16:9 set adjustments with wide picture format. Then make the necessary adjustments with other picture formats/signals. The required adjustments are shown in the table below.

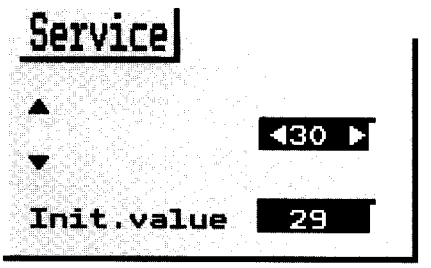
Note! Check the configuration of the TV set before making the adjustments and make only the necessary adjustments.

Making a service adjustment
1. Give a two digit code which determines an adjustment (e.g. 00 = vertical shift, see the following tables) with the number buttons. You can also select the adjustment with cursor buttons (up-/down).

Note! Power supply and UG2 adjustments must be done before picture geometry adjustments.



2. Adjust with the cursor buttons (left/right).



3. Store the new value by pressing the OK button.

Note!
- *To avoid incomplete adjustments store each adjustment in the memory immediately after an adjustment has been made.*
- *If an adjustment has to be made separately for different picture format/signal, select first the normal mode by pressing the TV button and select then the desired picture format/signal. Return to service mode by pressing the i button.*

Picture geometry adjustments

			4:3 sets					16:9 sets						
Adjustment	**Code**	**OSD name**	**CLASSIC (4:3)**	**MOVIE (4:3)**	**MOVIE LIFTED (4:3)**	**WIDE (4:3)**	**CLASSIC (16:9)**	**IDEAL (16:9)**	**FULL (16:9)**	**FULL LIFTED (16:9)**	**WIDE (16:9)**	**RGB**	**60 Hz signal**	**Note!**
Vertical off-centre shift	00	V-SHIFT	X								X			Center line
Vertical amplitude	01	V-AMPL.	X								X		X	Adjust upper side
Vertical slope	02	V SLOPE	X								X			Adjust lower part
Vertical S-correction	03	S-CORR.	X					X			X			
Vertical zoom	04	VER ZOOM	(X)	X		X		X	X		(X)			Recommended to use init value first!
Vertical scrolling	05	V SCROLL	(X)			X				X	(X)			Recommended to use init value first!
Width	06	WIDTH	X	X			X				X		X	
Horizontal shift deflection	07	H-SHIFT	X								X	X	X	
Parabola	08	PARABOLA	X								X			
Corner	09	CORNER	X								X			
Trapezium	10	TRAPEZ	X								X			

Service adjustments

O Power supply block

Supply voltage and protection circuit

1. Set the brightness and the contrast to the normal level. Connect a universal voltmeter to the cathode of Vo31.

2. Adjust the U1 voltage with U1 VALU in the service mode. (The voltage depends on the picture tube type, refer to the section "Variable components").

3. Check the over-current protection after making any service operations in the primary circuit of the power supply. Switch the set to stand-by mode. Short circuit the cathode of Vo50 to the ground and keep the short circuit connected. When the over-current protection works correctly, the power supply stops permanently. Switch off the receiver by pressing the mains button. Remove the short circuit and then switch on the receiver by pressing the mains button.

AFC adjustments (code 12 and 13)

1) The right value is found when while changing the value, the AFC display changes from 0 to 1.

2) Adjust with a channel sent with L'-standard. Needed only in multinorm TV sets.

Note! Use the right channel frequency.
Tune the channel with "manual tuning method" (see page 7).

K Horizontal deflection block

Focusing

Set the brightness and the contrast to the normal level. Use the crosshatch pattern and adjust the picture for optimum resolution.

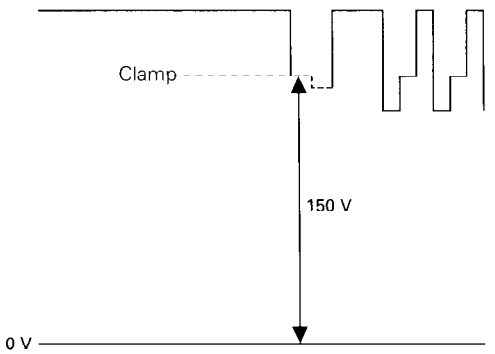
(Screen grid voltage) Ug2 voltage

1. Set the brightness and the colour saturation to the normal level and the contrast to minimum.

2. At the end of the vertical blanking, there is a black current measurement pulse (clamp pulse) at pin 9, 12 and 15 of NH01. Use an oscilloscope and find the output stage with the highest cut-off (i.e. the highest voltage during the black current measurement pulse).

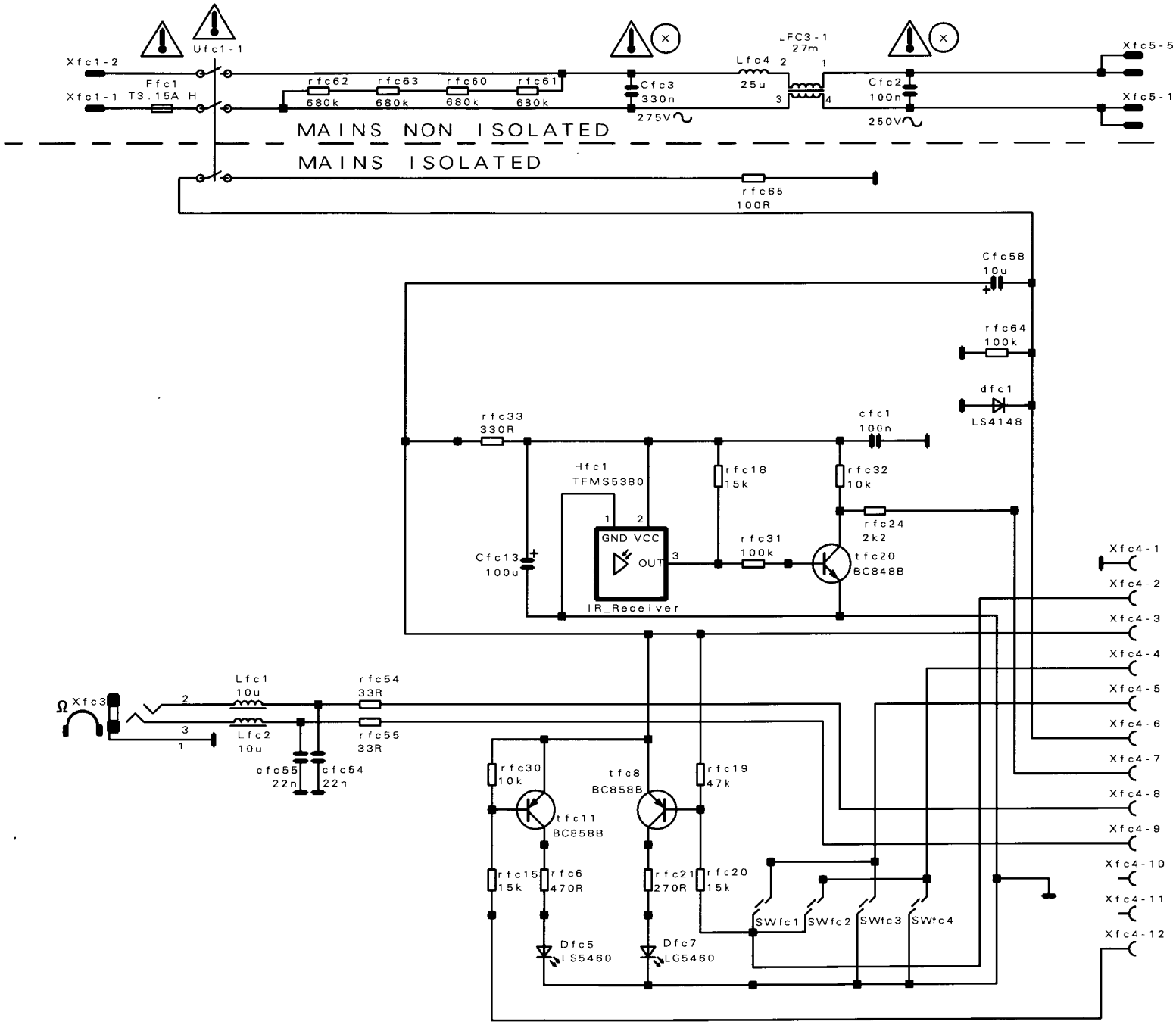
3. Adjust the voltage of the upper clamp pulse to +150 V with Ug2 (see figure).

Note! Adjust the voltage with a clamp pulse.



Other adjustments

Adjustment	Code	OSD name	RF OTHER	RF SECAM L	SCART	Note!
Luma delay	11	Y-DELAY	X	X	X	
IF 33.9 reference voltage for AFC	12	REF 339				1), 2)
IF 38.9 reference voltage for AFC	13	REF 389				1)
STV5180 DAC value for U1 control	14	U1 VALU				Must be done before other adjustments!
Red gain	15	R GAIN				
Green gain	16	G GAIN				
Blue gain	17	B GAIN				


Xfc1-2
Ufc1-1
Xfc1-1
Ffc1
T3.15A H
rfc62
680k
rfc63
680k
rfc60
680k
rfc61
680k
Cfc3
330n
275V
LFC3-1
27m
Lfc4
25u
Cfc2
100n
250V
Xfc5-5
Xfc5-1
MAINS NON ISOLATED
MAINS ISOLATED
rfc65
100R
Cfc58
10u
rfc64
100k
dfc1
LS4148
rfc33
330R
cfc1
100n
Hfc1
TFMS5380
GND VCC
OUT
IR_Receiver
rfc18
15k
rfc32
10k
rfc24
2k2
rfc31
100k
tfc20
BC848B
Cfc13
100u
Xfc4-1
Xfc4-2
Xfc4-3
Xfc4-4
Xfc4-5
Xfc4-6
Xfc4-7
Xfc4-8
Xfc4-9
Xfc4-10
Xfc4-11
Xfc4-12
Xfc3
Lfc1
10u
Lfc2
10u
rfc54
33R
rfc55
33R
cfc55
22n
cfc54
22n
rfc30
10k
tfc11
BC858B
tfc8
BC858B
rfc19
47k
rfc15
15k
rfc6
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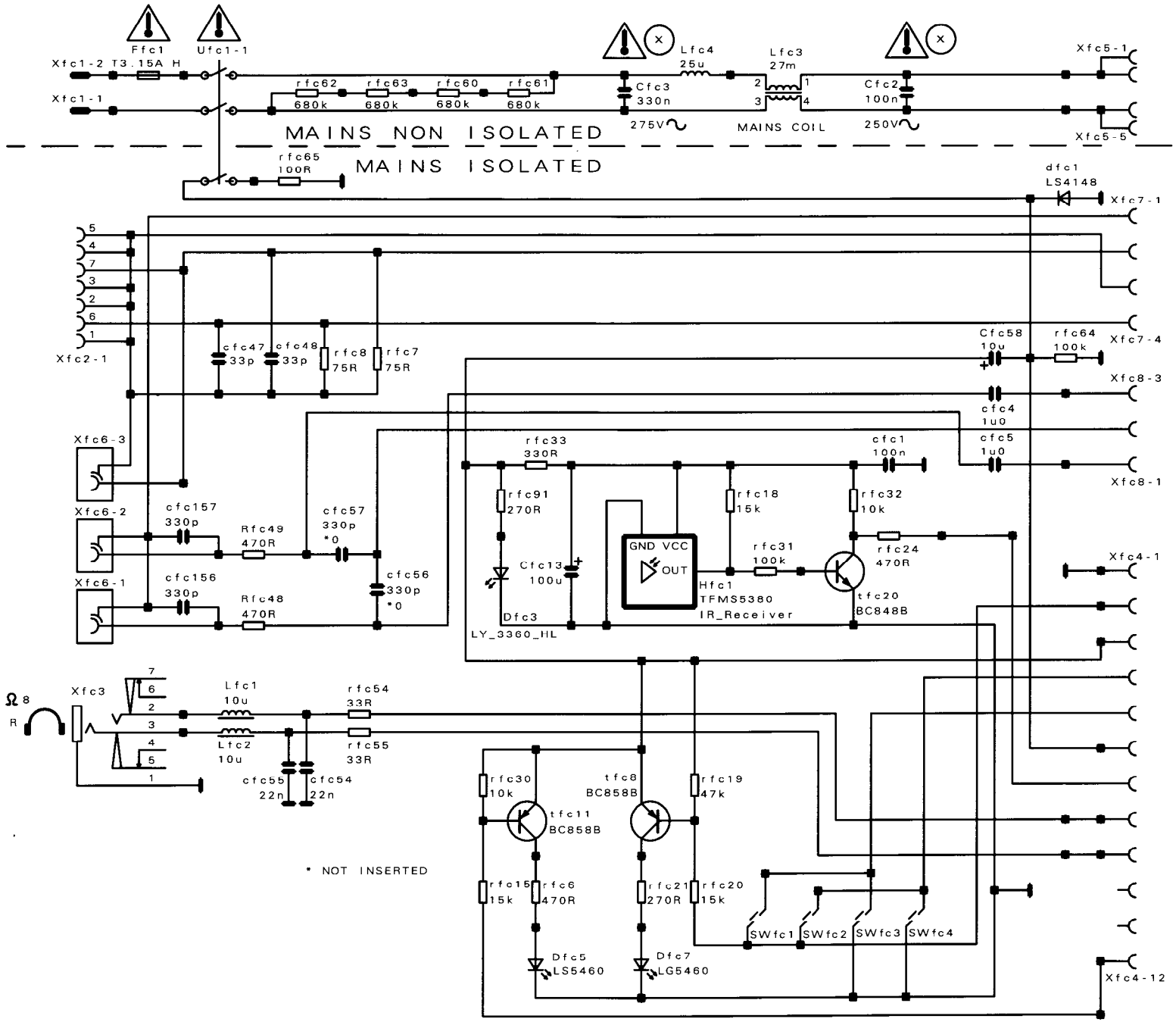
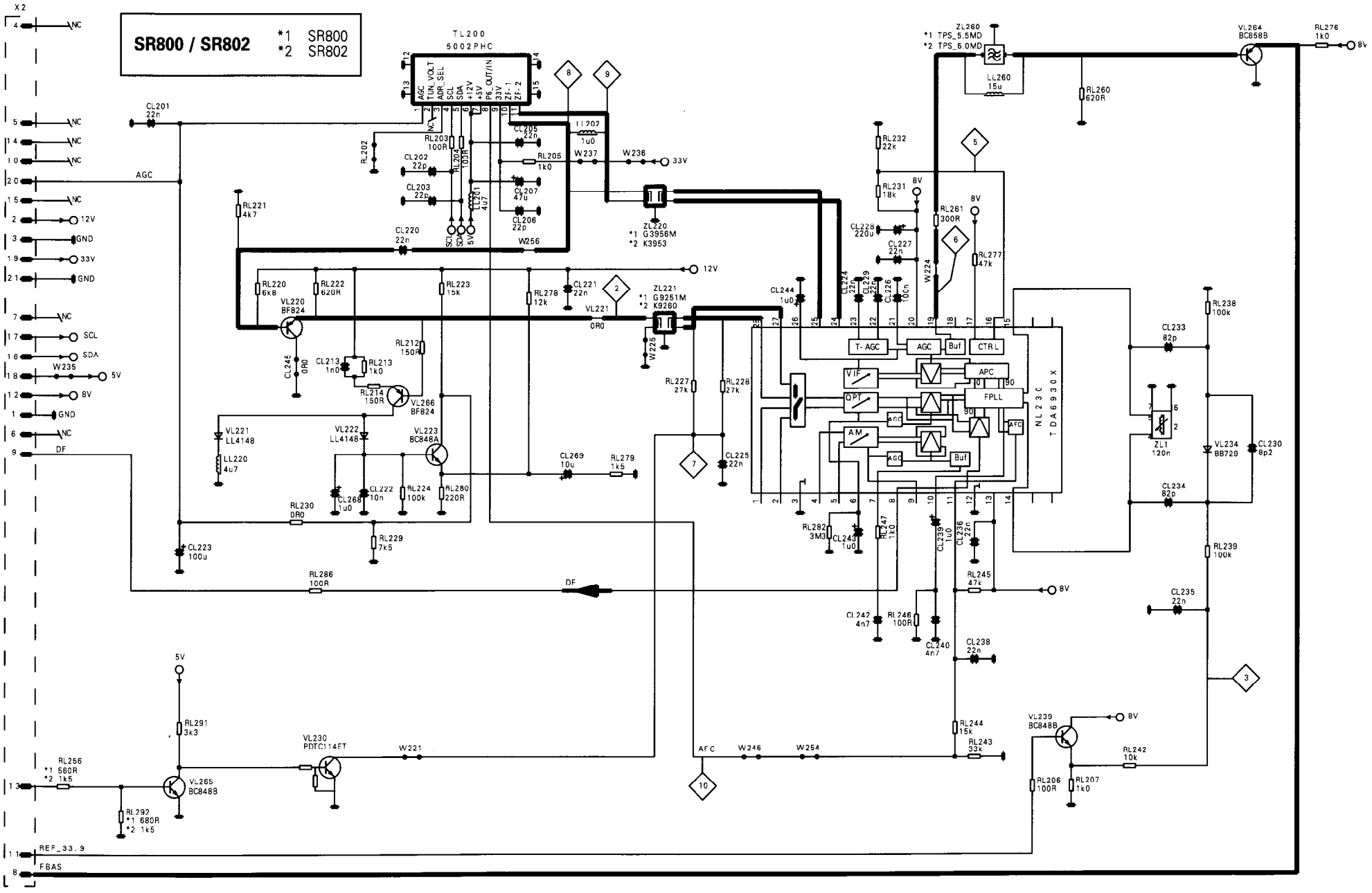
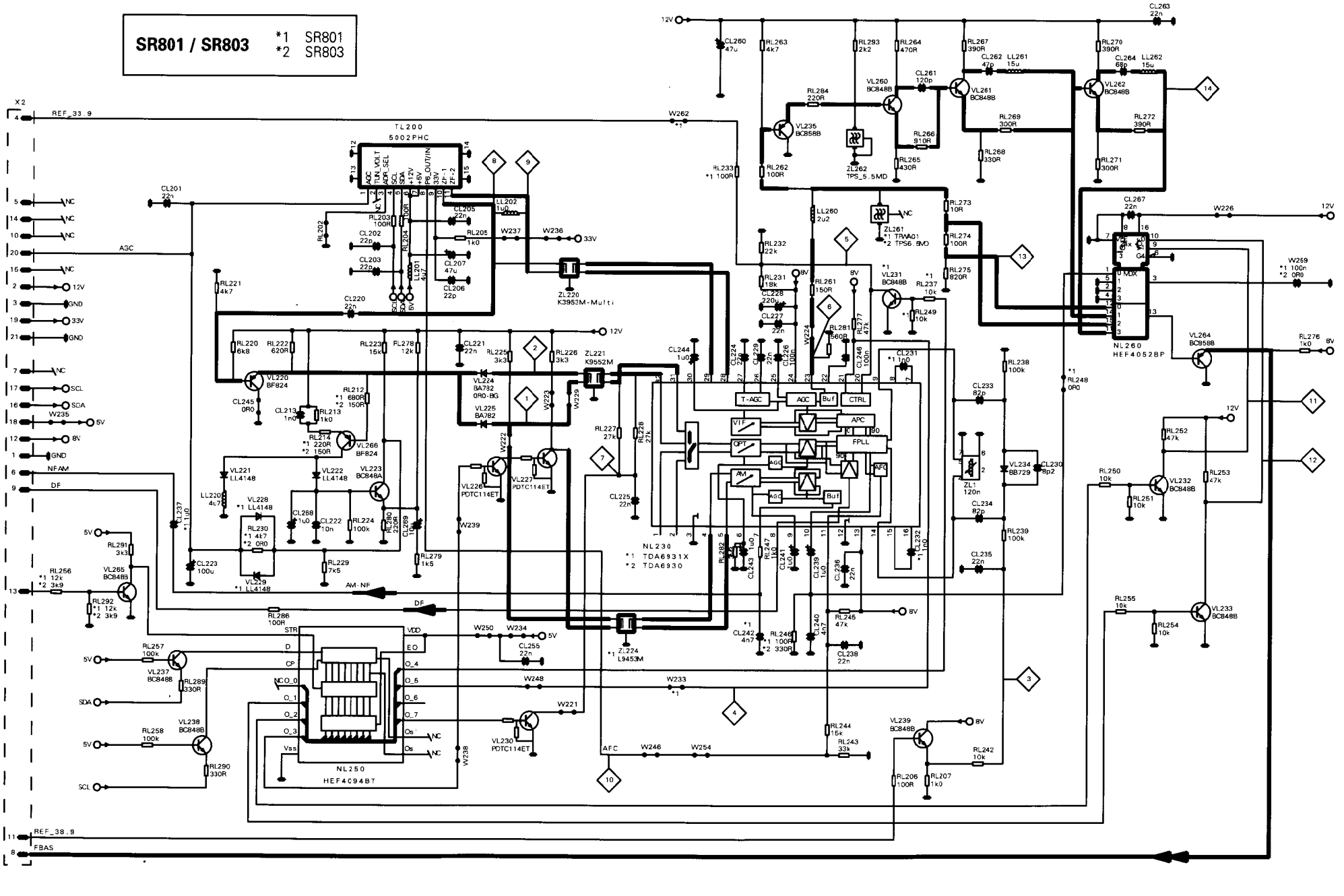
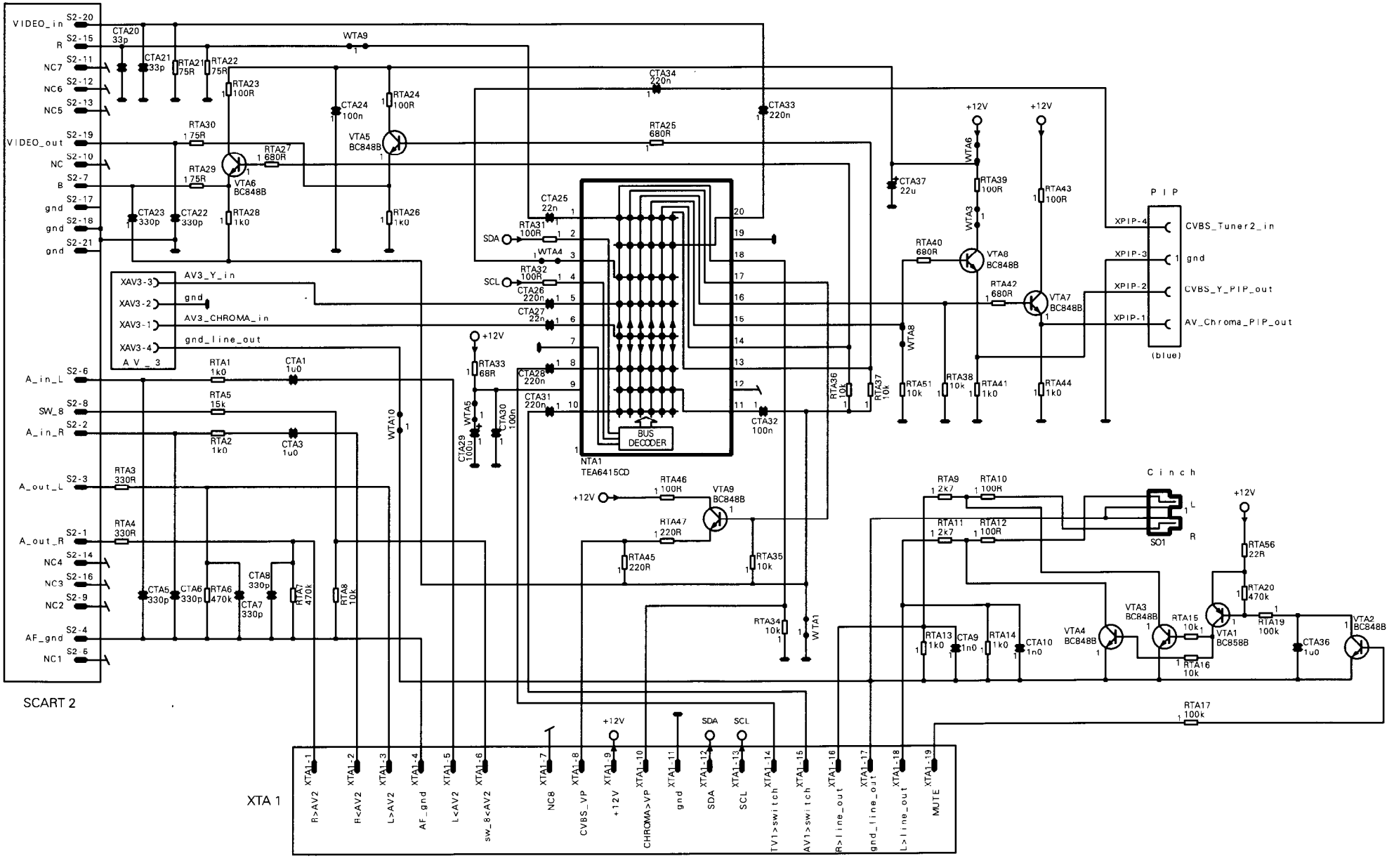
SWfc2
SWfc3
SWfc4
Dfc5
LS5460
Dfc7
LG5460

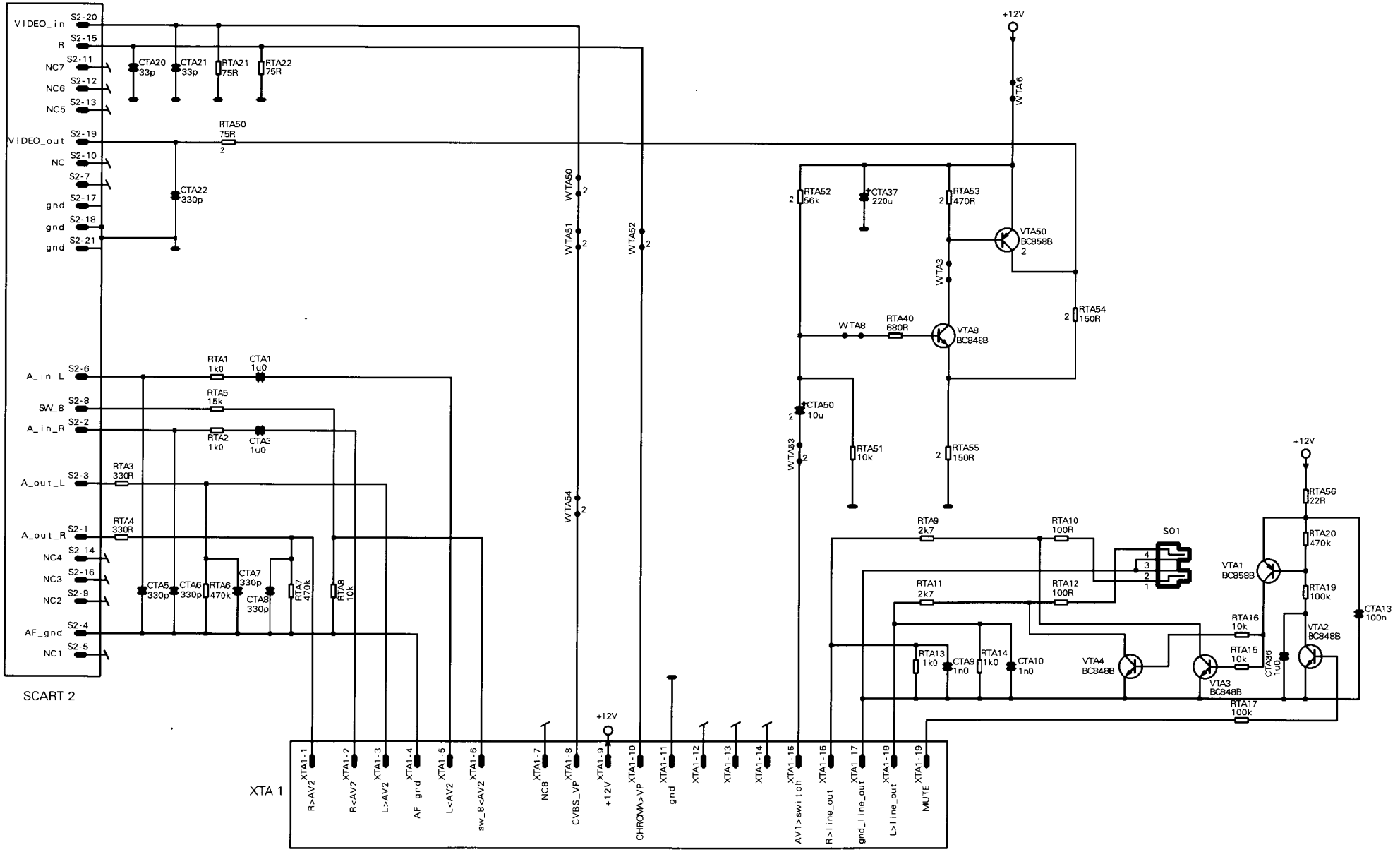

Ffc1
Ufc1-1
Xfc1-2 T3.15A H
Xfc1-1
rfc62 680k
rfc63 680k
rfc60 680k
rfc61 680k
Lfc4 25u
Cfc3 330n
275V
Lfc3 27m
MAINS COIL
Cfc2 100n
250V
Xfc5-1
Xfc5-5
MAINS NON ISOLATED
MAINS ISOLATED
rfc65 100R
dfc1 LS4148
Xfc7-1
Xfc2-1
cfc47 33p
cfc48 33p
rfc8 75R
rfc7 75R
Cfc58 10u
rfc64 100k
Xfc7-4
Xfc8-3
cfc4 1u0
cfc5 1u0
Xfc8-1
Xfc6-3
Xfc6-2
Xfc6-1
cfc157 330p
Rfc49 470R
cfc57 330p *0
cfc156 330p
Rfc48 470R
cfc56 330p *0
rfc33 330R
rfc91 270R
Cfc13 100u
Dfc3 LY_3360_HL
GND VCC OUT
Hfc1 TFMS5380 IR_Receiver
rfc18 15k
rfc31 100k
cfc1 100n
rfc32 10k
rfc24 470R
tfc20 BC848B
Xfc4-1
Xfc3
Lfc1 10u
Lfc2 10u
rfc54 33R
rfc55 33R
cfc55 22n
cfc54 22n
rfc30 10k
tfc11 BC858B
tfc8 BC858B
rfc19 47k
rfc15 15k
rfc6 470R
rfc21 270R
rfc20 15k
SWfc1
SWfc2
SWfc3
SWfc4
Dfc5 LS5460
Dfc7 LG5460
Xfc4-12
* NOT INSERTED


SR800 / SR802
*1 SR800
*2 SR802
X2
NC
12V
GND
33V
AGC
SCL
SDA
5V
8V
DF
REF_33.9
FBAS
TL200
5002PHC
AGC
TUN_VOLT
ADR_SEL
SCL
SDA
+12V
+5V
P6_OUT/IN
33V
ZF-1
ZF-2
CL201 22n
RL202
RL203 100R
RL204 100R
CL202 22p
CL203 22p
CL205 22n
RL205 1k0
CL207 47u
CL206 22p
CL201 4u7
LL202 1u0
W237
W236
33V
ZL220
*1 G3956M
*2 K3953
RL221 4k7
CL220 22n
W256
RL220 6k8
RL222 620R
RL223 15k
RL278 12k
CL221 22n
VL221
ZL221
*1 G9251M
*2 K9260
0R0
W225
VL220 BF824
CL245 0R0
CL213 1n0
RL213 1k0
RL212 150R
RL214 150R
VL266 BF824
VL221 LL4148
LL220 4u7
VL222 LL4148
VL223 BC848A
CL269 10u
RL279 1k5
CL268 1u0
CL222 10n
RL224 100k
RL280 220R
RL230 0R0
RL229 7k5
CL223 100u
RL286 100R
RL227 27k
RL228 27k
CL225 22n
CL244 1u0
CL224 22n
CL229 22n
CL226 10n
W224
RL232 22k
RL231 18k
RL261 300R
CL228 220u
CL227 22n
RL277 47k
ZL260
*1 TPS_5.5MD
*2 TPS_6.0MD
LL260 15u
RL260 620R
VL264 BC858B
RL276 1k0
T-AGC
AGC
Buf
CTRL
VIF
APC
QPT
FPLL
AM
AFC
NL230
TDA6930X
RL238 100k
CL233 82p
ZL1 120n
VL234 BB729
CL230 8p2
CL234 82p
RL239 100k
CL235 22n
RL282 3M3
CL243 1u0
RL247 1k0
CL239 1u0
CL236 22n
RL245 47k
CL242 4n7
RL246 100R
CL240 4n7
CL238 22n
RL244 15k
RL243 33k
RL242 10k
VL239 BC848B
RL206 100R
RL207 1k0
RL291 3k3
VL230 PDTC114ET
W221
AFC
W246
W254
RL256
*1 560R
*2 1k5
VL265 BC848B
RL292
*1 680R
*2 1k5

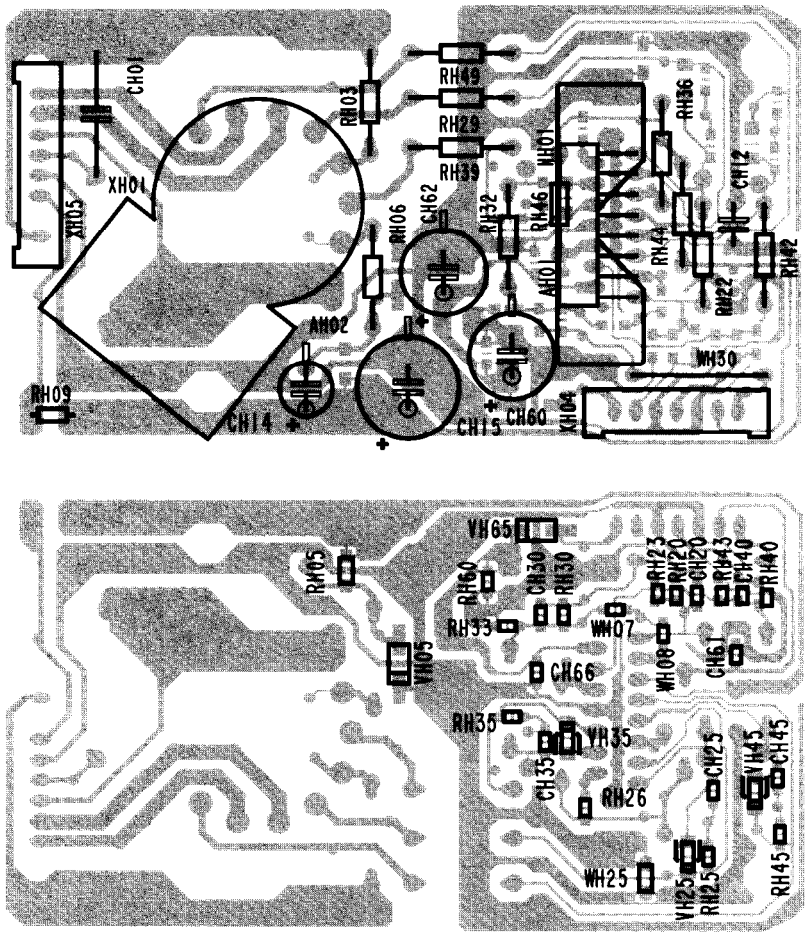
SR801 / SR803 *1 SR801 *2 SR803



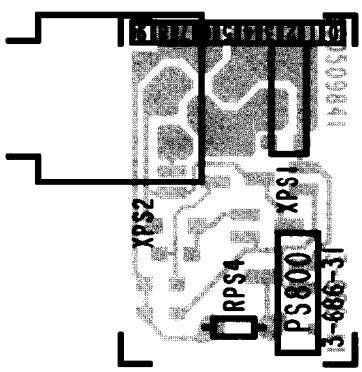

SCART 2
VIDEO_in
R
NC7
NC6
NC5
VIDEO_out
NC
B
gnd
gnd
gnd
AV3_Y_in
gnd
AV3_CHROMA_in
gnd_line_out
A_in_L
SW_8
A_in_R
A_out_L
A_out_R
NC4
NC3
NC2
AF_gnd
NC1
BUS DECODER
TEA6415CD
SDA
SCL
+12V
P I P
CVBS_Tuner2_in
gnd
CVBS_Y_PIP_out
AV_Chroma_PIP_out
(blue)
C i n c h
SO1
XTA 1
R>AV2
R<AV2
L>AV2
AF_gnd
L<AV2
sw_8<AV2
NC8
CVBS_VP
+12V
CHROMA>VP
gnd
SDA
SCL
TV1>switch
AV1>switch
R>line_out
gnd_line_out
L>line_out
MUTE

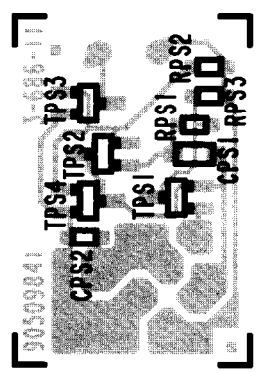

SCART 2
VIDEO_in S2-20
R S2-15
NC7 S2-11
NC6 S2-12
NC5 S2-13
VIDEO_out S2-19
NC S2-10
S2-7
gnd S2-17
gnd S2-18
gnd S2-21
A_in_L S2-6
SW_8 S2-8
A_in_R S2-2
A_out_L S2-3
A_out_R S2-1
NC4 S2-14
NC3 S2-16
NC2 S2-9
AF_gnd S2-4
NC1 S2-5
CTA20 33p
CTA21 33p
RTA21 75R
RTA22 75R
RTA50 75R
CTA22 330p
RTA1 1k0
CTA1 1u0
RTA5 15k
RTA2 1k0
CTA3 1u0
RTA3 330R
RTA4 330R
CTA5 330p
CTA6 330p
RTA6 470k
CTA7 330p
CTA8 330p
RTA7 470k
RTA8 10k
WTA50
WTA51
WTA52
WTA54
WTA6
WTA3
WTA8
WTA53
RTA52 56k
CTA37 220u
RTA53 470R
VTA50 BC858B
RTA54 150R
RTA40 680R
VTA8 BC848B
CTA50 10u
RTA51 10k
RTA55 150R
+12V
RTA56 22R
RTA9 2k7
RTA10 100R
SO1
RTA11 2k7
RTA12 100R
RTA20 470k
VTA1 BC858B
RTA19 100k
CTA13 100n
RTA16 10k
VTA2 BC848B
RTA13 1k0
CTA9 1n0
RTA14 1k0
CTA10 1n0
VTA4 BC848B
RTA15 10k
CTA36 1u0
VTA3 BC848B
RTA17 100k
XTA 1
XTA1-1 R>AV2
XTA1-2 R<AV2
XTA1-3 L>AV2
XTA1-4 AF_gnd
XTA1-5 L<AV2
XTA1-6 sw_8<AV2
XTA1-7 NC8
XTA1-8 CVBS_VP
XTA1-9 +12V
XTA1-10 CHROMA>VP
XTA1-11 gnd
XTA1-12
XTA1-13
XTA1-14
XTA1-15 AV1>switch
XTA1-16 R>line_out
XTA1-17 gnd_line_out
XTA1-18 L>line_out
XTA1-19 MUTE

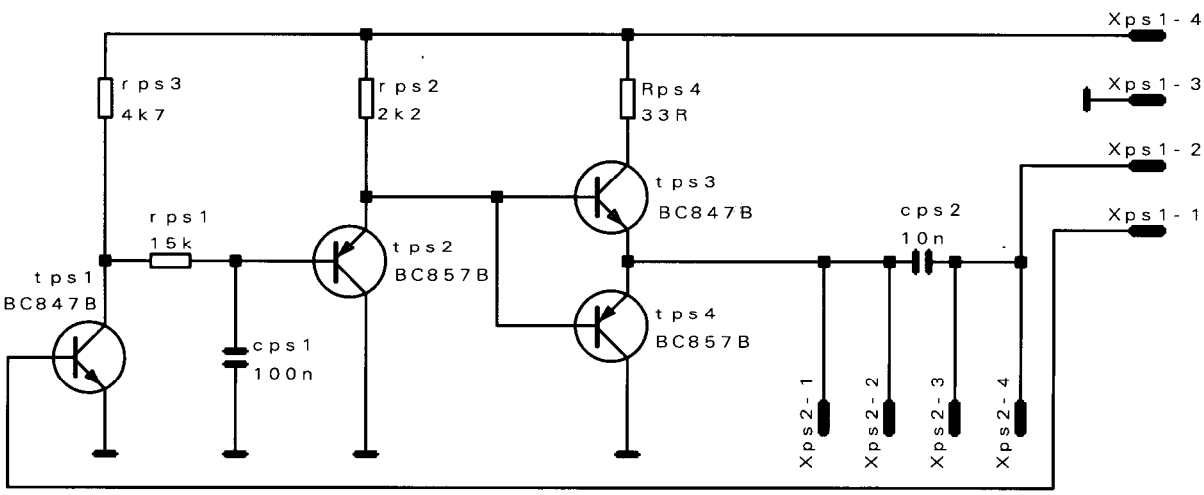
HH800/HH810 CRT module



PS800 Picture tilt module







(GB) Variable components
(D) Röhrenabhängige Bauteile
(S) Varierande komponenter
(F) Composants variables
(I) Componenti che differiscono

Picture tube	Vi A59EAS 13X01		Vi A59EHJ 43X01		Vi A66EAS 13X01		Vi A66EHJ 43X01		Vi A66EHJ 43X01		Vi W66EHU 013X101		Vi A80AEJ 33X04	
Chassis	C*AB1A*		B*BC3A*		C*AE1A*		B*AF2A*		B*BF3A*		C*BJ7A*		B*AM3A*	
PW-block	PW-8B0		PW-8C0		PW-8E0		PW-8F0		PW-8F0		PW-8J0		PW-8M0	
RF-block	RF-801		RF-803		RF-801		RF-802		RF-803		RF-807		RF-803	
RA 42,43			3142 5852	100R			3142 5852	100R	3142 5852	100R	3142 5852	100R	3142 5852	100R
RA 65,66			3142 6211	2K0					3142 6211	2K0	3142 6211	2K0	3142 6211	2K0
RD 59	3163 0092	390K	3154 8967	270K	3163 0092	390K	3154 8967	270K	3154 8967	270K	3163 0045	220K	3154 8967	270K
RE 07,08			3142 5669	75R					3142 5669	75R			3142 5669	75R
RE 48,49			3142 5817	470R					3142 5817	470R			3142 5817	470R
RE 50,51			3142 5848	470K					3142 5848	470K			3142 5848	470K
RK 51					3154 8729	82K	3154 8729	82K	3154 8729	82K	3154 8729	82K	3144 0013	61K9
RS 12	3143 0281	2R15 0W6	3143 0281	2R15 0W6	3143 0281	2R15 0W6	3143 0281	2R15 0W6	3143 0281	2R15 0W6	3143 0301	3R0 0W6	3143 0281	2R15
RS 34	3143 0281	2R15 0W6	3143 0281	2R15 0W6	3143 0281	2R15 0W6	3143 0281	2R15 0W6	3143 0281	2R15 0W6	3143 0301	3R0 0W6	3143 0281	2R15
CA 20,21,40,41			3212 5517	330p			3212 5517	330p	3212 5517	330p	3212 5517	330p	3212 5517	330p
CA 42,43			3422 3250	22µ / 16V			3422 3250	22µ / 16V	3422 3250	22µ / 16V	3422 3250	22µ /16 V	3422 3250	22µ / 16V
CA 58,59	3422 0551	470µ / 16V	3455 0001	1000µ / 16V	3422 0551	470µ / 16V	3455 0001	1000µ / 16V	3455 0001	1000µ / 16V	3455 0001	1000µ / 16V	3455 0001	1000µ / 16V
CE 35,36			3212 5517	330p					3212 5517	330p	3212 5517	330p	3212 5517	330p
CE 60,61			3454 0022	1µ0 / 63V					3454 0022	1µ0 / 63V			3454 0022	1µ0 / 63V
CE 156,157			3212 5517	330p					3212 5517	330p			3212 5517	330p
CK 11	3324 0835	27n 400V	3324 0835	27n 400V	3324 0835	27n 400V	3324 0835	27n 400V	3324 0835	27n 400V	3325 0915	22n	3324 0835	27n 400V
CK 13	3348 0013	400n 400V	3348 0011	300n 400V	3348 0013	400n 400V	3348 0011	300n 400V	3348 0011	300n 400V	3348 0011	300n 400V	3348 0011	300n 400V
CK60	3312 0948	1µ5 63V	3312 0948	1µ5 63V	3312 0948	1µ5 63V	3312 0948	1µ5 63V	3312 0948	1µ5 63V	3338 0021	3µ3 100V	3312 0948	1µ5 63V
NR 02			3786 0042	IC SRAM					3786 0042	IC SRAM	3786 0042	IC SRAM		
NR 03	3786 0025	IC SRAM			3786 0025	IC SRAM	3786 0025	IC SRAM					3786 0025	IC SRAM
LA 04,05			4562 0055	5,6µH B82144			4562 0055	5,6µH B82144	4562 0055	5,6µH B82144	4562 0055	5,6µH B82144	4562 0055	5,6µH B82144
LK 60	4538 0006	490µH	4538 0006	490µH	4538 0006	490µH	4538 0006	490µH	4538 0006	490µH	4538 0025	590µH	4538 0006	490µH
W 42											Jumper	10mm		
W 72			Jumper	8,75 mm			Jumper	8,75 mm	Jumper	8,75 mm	Jumper	8,75 mm	Jumper	8,75 mm
W 77			Jumper	10,0 mm			Jumper	10,0 mm	Jumper	10,0 mm	Jumper	10,0 mm	Jumper	10,0 mm
WA 23,38,39			Jumper	15,0 mm			Jumper	15,0 mm	Jumper	15,0 mm	Jumper	15,0 mm	Jumper	15,0 mm
WA 24			Jumper	20,0 mm			Jumper	20,0 mm	Jumper	20,0 mm	Jumper	20,0 mm	Jumper	20,0 mm
WA 52,59			3142 5802	0R			3142 5802	0R	3142 5802	0R	3142 5802	0R	3142 5802	0R
WA 53,55	3142 5802	0R			3142 5802	0R								
WD 51	Jumper	12,5 mm			Jumper	12,5 mm								
WD 61	3142 5601	0R			3142 5601	0R								
WW 01,02			Jumper	10,0 mm			Jumper	10,0 mm	Jumper	10,0 mm	Jumper	10,0 mm	Jumper	10,0 mm
Rear plate	8440 0680		8440 0920		8440 0680		8440 0920		8440 0920		8440 0920		8440 0920	
PS800 module											6913 7137	PS800		
TA80x module			6913 7138	TA800			6913 7141	TA801	6913 7138	TA800	6913 7138	TA800	6913 7138	TA800
U1- voltage	150V		150V		150V		150V		150V		150V		150V	

ONLY FOR PUSH THROUGH
VERSIONS FC80B

NETZGETRENNT/MAINS-INSULATED

NETZVERBUNDEN/MAINS-CONNECTED

DEGAUSSING COIL

SERVICE

SLIDESWITCH

IR_Receiver

TFMS5360

TL7705A

EPROM

GM76C8128

NR02
256k GM76C256
1M TC551001
4M HM514100

TPU3050S

NF01 SDA30C263

NF02 A262144/0

NF03ST24W16D

N001 TEA2262

DRAM-/SRAM-INTERFACE

SLICER

RGB-INTERFACE

LAYER

OSD / OSD

CHARACTER ROM

PROG. ROM

CLOCK GENERAT

SYNC-INTERF

I2C-BUS INTERF

MUX AGC ADC

PORT_3

PORT_1

PORT_0

ADC

PWM

Watchdog Timer

Serial

Timer0

Timer1

CPU

RAM

XRAM

OSC&TIMING

BUS INTERFACE MEMORY EXTERNAL

SERVICE

XF01

SCART 1

XW03 *5

U55

U56

U3

U2

U5S

U1

U7

NR01

TPU3050S

DRAM-/SRAM-INTERFACE

SLICER

MUX AGC ADC

LAYER MAT / OSD

RGB-INTERFACE

ROM CHARACTER

INTERF DMA

6502 / PROG. ROM

CLOCK GENERAT

SYNC-INTERF

I2C-BUS INTERF

NR02

256k GM76C256
1M TC551001
4M HM514100

GM76C8128

NF03ST24W16D

N001 TEA2262

N002 TDA8132

N004 L78M05CV

N005 STV5180

N006 *0

N007 LM317T

NDO1 TDA8854H

PAL/SECAM /NTSC-DEC

BASEBD. DELAY

RGB2 MATRIX SWITCH

LUMA DELAY

H-OUT 2nd LOOP

SYNC-SEPERAT. 1st LOOP VCO

EW/VERTICAL-DRIVE

DIVIDER

FM-PLL

TDA8172

VERT. ABLENKUNG
DEFLECTION
DEFLESSIONE

NETZGETRENNT/MAINS-INSULATED

NETZVERBUNDEN/MAINS-CONNECTED

Jumper without PFC

SCART 1

XW03 *5

PIP/GUESTLINK

ZF

A103

FRONTEND_DISCRETE

COMBFILTER

XW02 *10

XW01

TV-CVBS

XP34

MSP
3410DPO

DFP

SCART SWITCH FACILITY

NA01 A2 : MSP3400C
NICAM : MSP3410D

NA02 MC78L06ACP

NDO1 TDA8854H

PAL/SECAM
/NTSC-DEC

BASEBD. DELAY

RGB2 MATRIX SWITCH

RGB MATRIX SWITCH

RGB-CONTROL OUTPUT

H-OUT 2nd LOOP

SYNC-SEPERAT. 1st LOOP VCO

LUMA DELAY

SAT.-CONTROL

SWITCH + FILTER

VOLUME SWITCH

FM-PLL

I2C-BUS

EW/VERTICAL-DRIVE

DIVIDER

SCART1-CVBS

TV-CVBS

AV-Y

AV-C

VERT. ABLENKUNG
DEFLECTION
DEFLESSIONE

E/W-Modulator

N510 TDA8172

XS01-1

XS01-2

UBCL

H_FLYBACK

*0 not inserted
*1 static RAM 256k or 1M
*2 dynamic RAM 4M
*3 sets with 1 scart
*4 sets with 2 scart
*5 PIP
*6 AV front
*7 stereo without ext.speakers
*8 stereo with ext.speakers
*9 dolby
*10 without comp.filter
** version component

1192.6xxx

COMBFILTER
XW02 *10

DPL/SUBWOOFER

MSP
3410DPD

DFP

NA01 A2 : MSP3400C
NICAM : MSP3410D

NA02 MC78L06ACP

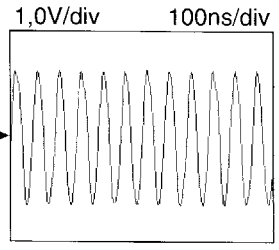
NA50 TDA7263M

NA70 TDA2822M

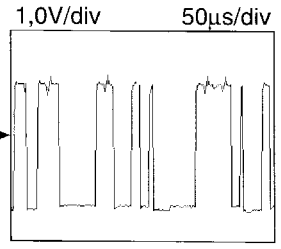
- *0 not inserted
- *1 static RAM 256k or 1M
- *2 dynamic RAM 4M
- *3 sets with 1 scart
- *4 sets with 2 scart
- *5 PIP
- *6 AV front
- *7 stereo without ext.speakers
- *8 stereo with ext.speakers
- *9 dolby
- *10 without comp.filter
- ** version component

1192.6xxx

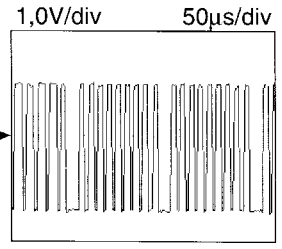
TP21 Xtal
1,0V/div 100ns/div
2,5V



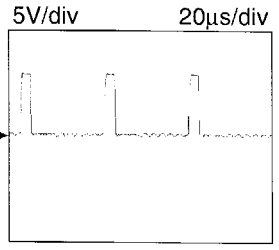
TP22 SDA
1,0V/div 50µs/div
3,0V



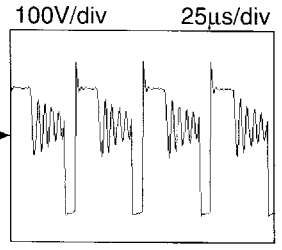
TP23 SCL
1,0V/div 50µs/div
3,0V



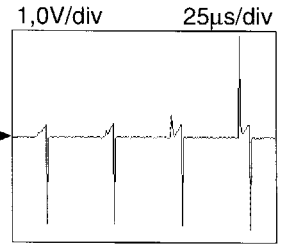
TP44
5V/div 20µs/div
0,0V



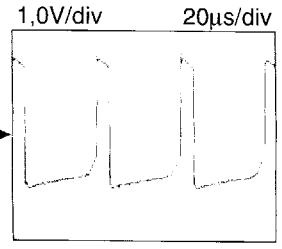
TP45
100V/div 25µs/div
300V



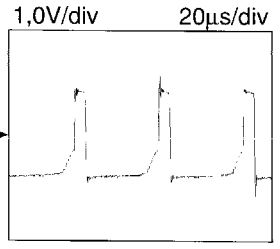
TP46
1,0V/div 25µs/div
0,0V



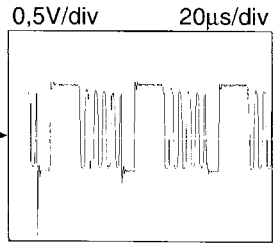
TP47
1,0V/div 20µs/div
1,0V



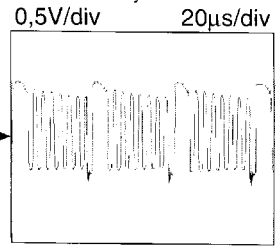
TP48
1,0V/div 20µs/div
1,0V



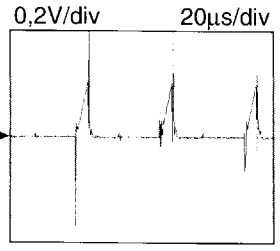
TP49a
0,5V/div 20µs/div
0,0V



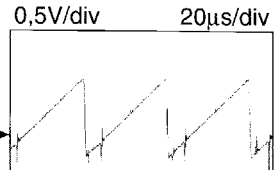
TP49b stby
0,5V/div 20µs/div
0,0V



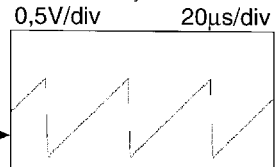
TP50
0,2V/div 20µs/div
0,0V



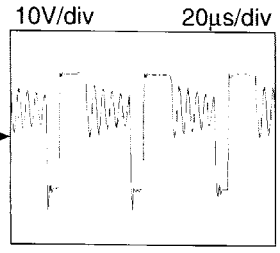
TP51a
0,5V/div 20µs/div
2,0V



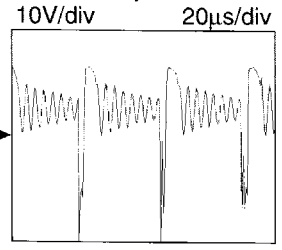
TP51b stby
0,5V/div 20µs/div
2,0V



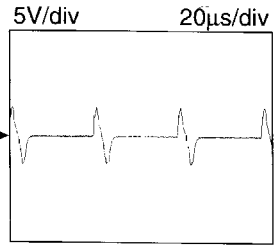
TP52a
10V/div 20µs/div
-10V



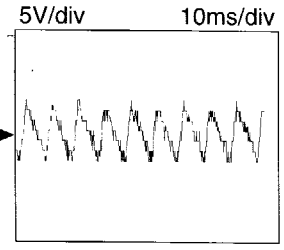
TP52b stby
10V/div 20µs/div
-10V



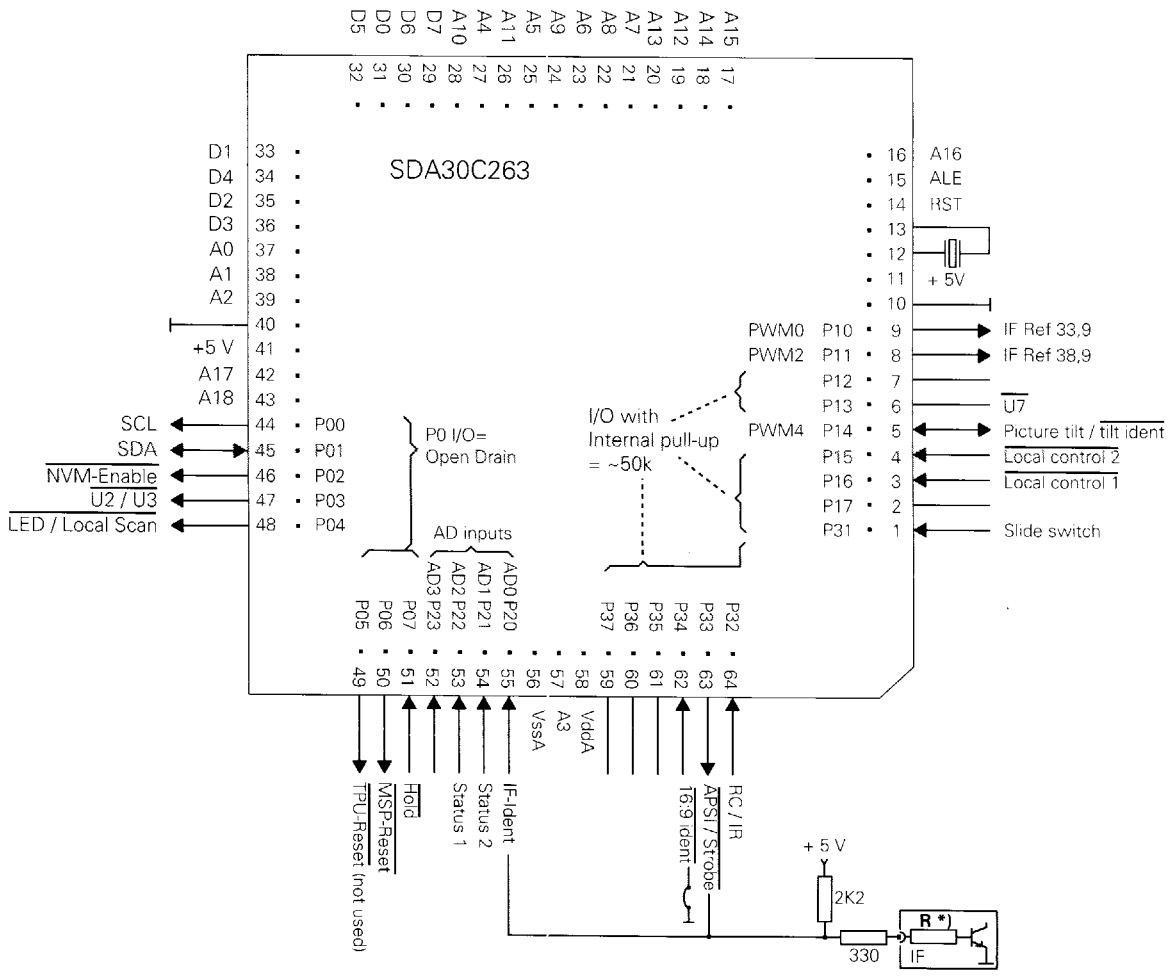
TP53
5V/div 20µs/div
0,0V

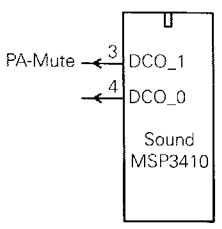


TP54
5V/div 10ms/div
330V



NF01





Scart status voltages		
Mode	Scart	µP-pin
4:3	8,5...12V	3,4...5V
16:9	3.5...8V	1,4...3,2V
OFF	0...3V	0...1,2V

AD0 as IF Ident

Voltages	R *)	IF versions	Frontend mod.
3,9 - 5,0	12k	BG / DK / I / LL'	SR801
3,1 - 3,9	3k9	BG / DK	SR803
2,3 - 3,1	1k5	I	SR802
1,7 - 2,3	680	BG	SR800

3rd EDITION

CHASSIS SP2-SERIE

6611 96 18

TP1 TV video (col. bar)
0,2V/div 10µs/div
3,8V

TP2 Sound IF FM+Nicam
0,1V/div 2µs/div
3,3V

TP3 Audio R 1 kHz
0,5V/div 500µs/div
2,0V

TP4 Audio L 3 kHz
0,5V/div 500µs/div
2,0V

TP5 Hp R 1 kHz
0,1V/div 200µs/div
0,0mV

TP6 Hp L 3 kHz
0,1V/div 200µs/div
0,0mV

TP7 Xtal
1,0V/div 50ns/div
2,0V

TP8 AV-C
0,5V/div 10µs/div
1,0V

TP9 AV-Y
0,5V/div 10µs/div
4,0V

TP10 Scart 1 Video(1scart)
0,2V/div 10µs/div
3,8V

TP11 Scart 1 Video(2scart)
0,2V/div 10µs/div
3,8V

TP12 Y-sigr
0,5V/div 10µs/div
2,5V

TP13 Xtal
0,1V/div 100ns/div
0,0mV

TP14 R
0,5V/div 10µs/div
3,5V

TP15 G
0,5V/div 10µs/div
3,5V

TP16 B
0,5V/div 10µs/div
3,5V

TP17 R
20V/div 10µs/div
110V

TP18 G
20V/div 10µs/div
110V

TP19 B
20V/div 10µs/div
110V

TP20
10V/div 25µs/div
20V

TP24 H-flyb
2,0V/div 20µs/div
6,0V

TP25 H
200V/div 25µs/div
600V

TP26 H
50V/div 25µs/div
150V

TP27 H
1,0V/div 20µs/div
3,0V

TP28 H
0,5V/div 20µs/div
1,5V

TP29 BCL
0,5V/div 5ms/div
3,5V

TP30 V
1,0V/div 10ms/div
2,0V

TP31 V
1,0V/div 10ms/div
2,0V

TP32 V
10V/div 5ms/div
20V

TP33 V
0,5V/div 10ms/div
0,0V

TP34 V
1,0V/div 5ms/div
3,0V

TP35 E-W
0,2V/div 5ms/div
1,6V

TP36 E-W
0,1V/div 10ms/div
0,3V

TP37 E-W
50V/div 5ms/div
150V

TP38 E-W
50V/div 25µs/div
150V

TP39
2,0V/div 25µs/div
-4,0V

TP40
50V/div 25µs/div
0,0V

TP41
50V/div 25µs/div
0,0V

TP42
50V/div 20µs/div
100V

TP43
20V/div 25µs/div
0,0V